surgery is being carried on by members of the Division with his encouragement and advice. Thus, as stimulating teacher and brilliant research leader, Dr. Naffziger has developed, in the Division of Surgery in the University of California Medical School, one of the finest surgical departments in the country; and as executive administrator, combining vision with sound judgment, he has been influential in formulating the policies of the Medical School and the University. Of both, he is an ornament and a source of strength."

Other tributes by Francis Scott Symth, Dean of the University of California Medical School, and Dr. Foster Kennedy, New York, are equally gracious and commendatory. The scope of the dedicatory issue, covering 431 pages, may be appreciated by scanning the list of contributors and their topics of discussion. Members of the medical profession in California take pleasure, therefore, in joining with colleagues who are associated with the University of California Medical School, in extending felicitations to Doctor Howard C. Naffziger.

The list of contributors to the dedication number of *The Journal of Nervous and Mental Disease*, an educational journal of neuro-psychiatry, by-the-way founded in 1874, follows:

Salutation. *By N. T. Kirk, Major General, U. S. Army*
Salutation. *By Robert G. Sproul, President, University of California*
Salutation. *By F. S. Smyth, M.D., Dean, University of California Medical School*
Dr. Howard Naffziger. *By Foster Kennedy, M.D.*
Early Days of Neurosurgery in America. *By Bernard Sachs, M.D.*
Reconstructive Orthopædic Surgery for Disabilities Resulting from Irreparable Injuries to the Radial Nerve. *By LeRoy C. Abbott, M.D.*
The Neurologic Complications of Hemophilia. *By P. M. Aggeler, M.D., and S. P. Lucia, M.D.*
The Effect of Desoxycorticosterone in Epilepsy. *By Robert B. Aird, M.D.*
Cushing's Disease. *By Evelyn Anderson, M.D., Ph.D., and Webb Haymaker, Captain, M.C.*
The Effects of Iodized Poppyseed Oil and Iodine-Chlorine in Peanut Oil in the Subarachnoid Space of Animals. *By Edwin Boldrey, M.D., and Robert B. Aird, M.D.*
Progressive Lenticular Degeneration. *By Olga Bridgman, M.D., and Francis S. Smyth, M.D.*
Referred Head Pain and Its Concomitants. *By Douglas G. Campbell, M.D., M.R.C.P. (Lond.), and Clare M. Parsons, M.S.*
Cystic Hydrops of the Pineal Gland. *By Jesse L. Carr, M.D.*
The Epileptic Driver. *By W. E. Carter, M.D.*
Papilledema (Choked Disk) and Papillitis (Optic Neuritis); Their Differential Diagnosis. *By Frederick C. Cordes, M.D., and Samuel D. Aiken, M.D.*
Anorexia Nervosa or Simmonds' Disease? *By Roberto F. Escamilla, Major, Medical Corps, U. S. Army*
Some Neurophysiological Aspects of the Menstrual Cycle and Its Disturbances. *By Paul G. Fuerstner, M.D.*
Psychiatry and Public Health. *By J. C. Geiger, M.D.*
Sighing and Other Forms of Hyperventilation Simulating Organic Disease. *By Paul A. Gliebe, M.D., and Alfred Auerbach, M.D.*
A Perineurial Fibroblastoma Arising in the Cervical Sympathetic Chain. *By Donald Hall, M.D., and H. Glenn Bell, M.D.*
Wartime Ocular Neuroses. *By David O. Harrington, Lieutenant Commander (MC) U.S.N.R.*
Neuropathological Studies in Vitamin E Deficient Rats: A Preliminary Report. *By Richard W. Harvey, M.D., and James H. Perryman, A.B.*
The Immediate Care of the Unconscious Patient. *By Hubert R. Hathaway, M.D.*
Euthanasia. *By Frank Hinman, M.D.*
Hemangioblastoma of the Medulla—Lindau's Disease. *By Mervyn H. Hirschfield, M.D.*
Referred Pain From Skeletal Structures. *By Verne T. Inman, M.D., Ph.D., and John B. deC. M. Saunders, M.B., Ch.B., F.R.C.S.*
The Treatment of Post-Traumatic Head Pain. *By O. W. Jones, Jr., M.D., and Howard A. Brown, M.D.*
The Psychological Structure of the Obsessive Neuroses. *By J. S. Kasanin, M.D.*
Explorations by an Internist in the Field of Neuropsychiatry. *By Wm. J. Kerr, M.D.*
Aviation Medical Problems, with Special Reference to Altitude Pain. *By J. H. Lawrence, M.D.*
Leo Newmark. *By Milton B. Lennon, A.M., M.D.*
Subarachnoid Hemorrhage Due to Intracranial Rheumatic Aneurysm. *By Stuart Lindsay, M.D.*
Hypophysectomy in Cushing's Disease. *By H. Lisser, M.D.*
The Central Nervous System and Hematopoiesis. *By S. P. Lucia, M.D., and H. F. Marasse, M.D.*
Repair of Peripheral Injuries of the Facial Nerve. *By R. C. Martin, M.D.*
Central Nervous System Complications Arising From Diseases of the Blood Forming Tissues. *By Stacy R. Mettier, M.D.*
Critical Analysis of the Blood Brain Barrier. *By K. F. Meyer, Ph.D., M.D.*
Porencephaly. *By Earl R. Miller, M.D.*
Optic Neuritis and the Ethmoid Sinuses. *By Lewis Francis Morrison, A.B., M.A., M.D.*
The Rôle of the Autonomic Nervous System in Accommodation for Far and Near Vision. *By J. M. D. Olmsted.*
Some Observations on Induction Center and Training Station Psychiatry. *By Lt. Comdr. P. P. Poliak, MC-V (S) U.S.N.R.*
The Beginnings of Modern Thinking About Neurology. *By Langley Porter, B.S., M.D., M.R.C.S.*
Salt Metabolism in Poliomyelitis. *By James F. Rinehart, M.D.*
Clinical Allergy in the Nervous System. *By Albert H. Rowe, M.D.*
Glucose, Insulin, and Adrenalin Tolerance Tests in Head Injuries. *By Jurgen Ruesch, M.D., and Karl M. Bowman, M.D.*
Some Neurological Aspects of the Rôle Played by the Inorganic Elements. *By Carl L. A. Schmidt, M.S., Ph.D.*
Acromegaly and Diabetes Mellitus. *By H. C. Shepardson, M.D.*
Exophthalmos Secondary to Edema and Degenerative Changes in Orbital Tissues. *By Mayo H. Soley, M.D.*
Brachialgia Statica Paresthetica. *By Robert Wartenberg, M.D.*

EDITORIAL COMMENT†

SULFONAMIDE ALLERGY

The frequent occurrence of toxic reactions in patients treated with sulfonamides suggest the possibility that sulfonamides may function as specific antigens in the human body. Earlier attempts to establish the allergic nature of such toxicities, however, led to inconclusive results. While, in a few instances,[1] hypersensitive patients have shown positive skin reactions to homologous sulfonamides, the majority of the earlier reported patch, scratch and intradermal tests were negative. Furthermore, patients who had shown various toxic manifestations did not yield demonstrable precipitins, and passive transfer of their serums did not lead to skin sensitivity in normal persons. When sulfonamides were diazotized and tested in the form of azoprotein conjugates, similar negative results were recorded.[2]

Since none of these negative tests have definitely ruled out the possibility that the toxic symptoms are allergic, a study of the antigenicity of sulfonamides for laboratory animals was attempted by Wedum[3] of the University of Cincinnati. Sulfonamide azoproteins were prepared by the Landsteiner technique,[4] using human

† This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comments by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California Medical Association to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

serum, beef serum, rabbit serum and egg albumin as protein carriers. Rabbits were given ten to fourteen intravenous injections of one of these conjugates during a period of sixteen to twenty-three days and bled seven to fourteen days after the last injection. Control rabbits were injected with corresponding doses of uncombined sulfonamide. Tests of the resulting serums showed the presence of relatively specific precipitins for homologous sulfonamide conjugates, irrespective of the nature of the protein carrier. Antiserums from rabbits injected with sulfapyridine azo beef serum conjugate, for example, gave three plus precipitin reactions with sulfapyridine human serum conjugates, but only minor or negative reactions with heterologous sulfonamide conjugates. Tests with uncombined sulfonamides gave uniformly negative results.

Guinea pigs were sensitized with two to three combined subcutaneous and intraperitoneal doses of the sulfonamide conjugates given at three to four day intervals. From twenty-one to forty-two days later the guinea pigs were tested with an intravenous shocking dose of homologous and heterologous sulfonamide conjugates. Lethal anaphylaxis was recorded with homologous sulfanilamide conjugates irrespective of the nature of the protein carrier. Nonlethal cross reactions were noted with heterologous sulfonamide conjugates. Anaphylactic reactions were not obtained with uncombined sulfonamide drugs. Similar cross reactions were noted in a study of acquired skin sensitivity.

This work has been recently confirmed and studied in greater detail by Gerber and Gross[5] of the Mount Sinai Hospital, New York City. Landsteiner conjugates were prepared with the principle sulfonamides, using horse serum albumen, human albumen, ovalbumen, and gelatin as haptene carriers. Guinea pigs were sensitized with a single intraabdominal injection of a conjugate and tested by intravenous injection thirty days later. Massive intravenous injection of uncombined or free sulfonamides produced no demonstrable shock in these animals. Gelatin conjugates also gave negative results since they both failed to sensitize or to elicit anaphylaxis. Typical lethal shock was noted on intravenous injection of test doses of homologous sulfonamide-protein conjugates. There were strong cross reactions with uncombined homologous native protein, and with the same sulfonamide on heterologous protein carriers. Heterologous sulfonamide conjugates gave relatively weak or negative reactions.

A small area of the skin of sensitized rabbits was injected with 0.25 c.c. of a filtrate of meningococcus, previously proved to be capable of producing the Shwartzman phenomenon. Twenty-four hours later a test dose of sulfonamide conjugate was injected intravenously. A positive Shwartzman reaction was evidenced by a hemorrhagic cutaneous response in the prepared site, usually reaching its maximum in about four hours. Strong Shwartzman reactions were produced in all animals injected with homologous sulfa conjugates. Weaker or delayed reactions were recorded on intravenous injection of homologous native protein or of homologous sulfa drug on different protein carriers. Free or uncombined sulfa drug elicited no skin reaction. Gelatin conjugates also failed to sensitize or to give positive skin reactions. No skin reaction was elicited in similarly prepared skin areas of nonsensitized rabbits.

Cutaneous reactions and fever frequently occur in sulfonamide-treated patients who have previously received the same sulfonamide.[6] According to available experimental evidence this acquired sensitivity is presumably relatively specific. If so, subsequent use of a heterologous sulfonamide would not be contraindicated. Confirming this logic Erskine[7] found that sulfapyridine did not promote dermatitis in patients sensitive to sulfanilamide and that sulfanilamide had no allergic effects in sulfapyridine-sensitive patients. Lyons[8] found that patients who had experienced a febrile reaction to a second course of sulfathiazole did not react to sulfanilamide or to sulfapyridine.

Where and with what protein carrier uncombined sulfa drugs are conjugated in the human body so as to become fully antigenic has not yet been determined by the New York investigators.

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Student Nurse Recruitment Program

State recognition has been given to the importance of the student nurse recruitment program in California through the appointment by Governor Earl Warren of a Citizens' Committee for Student Nurse Recruitment, with Ray Lyman Wilbur, M. D., Chancellor Emeritus of Stanford University, as Chairman. As a second step, representation was made by the Citizens' Committee, through its Executive Board, to the State War Council which voted funds to sponsor the program as a War Service.

Headquarters through which all information now passes, and applications and student referrals are received, is at 411 Phelan Bldg., San Francisco 2. A similar office for student referrals for southern California is at 404 Washington Building, 311 South Spring Street, Los Angeles 12. All applicants should be referred to the nearest office. Field nurse educators are visiting schools in both North and South. . . .